

CLAIMS

1. A scaffolded fusion polypeptide comprising a functional polypeptide domain fused to a scaffold domain, wherein the functional polypeptide domain corresponds to a soluble loop of an integral membrane protein.

2. A polymeric scaffolded fusion polypeptide comprising a plurality of functional polypeptide domains wherein, each functional polypeptide domain corresponds to a soluble loop of an integral membrane protein and is fused to a scaffold domain.

3. The scaffolded fusion polypeptide according to Claim 1 wherein the scaffold domain is a metal chelating motif.

4. The scaffolded fusion polypeptide according to Claim 3 wherein the metal chelating motif is capable of chelating a zinc ion.

5. The scaffolded fusion polypeptide of Claim 4 wherein the metal chelating motif comprises a sequence of amino acids corresponding to SEQ ID NO:3 and a sequence of amino acids corresponding to SEQ ID NO:4.

6. The scaffolded fusion polypeptide of Claim 2 in which a first scaffold domain is linked to a second scaffold domain via a polypeptide linker.

7. The scaffolded fusion polypeptide of Claim 2 which corresponds to an extracellular domain of a naturally occurring receptor.

8. The scaffolded fusion polypeptide of Claim 7 which corresponds to the extracellular domain of CCR5.

9. A polypeptide comprising the amino acid sequence of SEQ ID NO:6.

10. A nucleic acid encoding the scaffolded fusion polypeptide of Claim 1.

11. A vector cassette for the expression of a scaffolded fusion polypeptide comprising an expression region operably linked to a promoter, said expression region comprising a plurality of cassettes, each of which encodes a module, domain or strand of the scaffolded fusion protein.

12. A vector comprising of the nucleic acid of Claim 10.

13. A host cell comprising the nucleic acid of Claim 10.

14. A host cell comprising the vector of Claim 11.

15. A host cell comprising the vector of Claim 12.

16. A method of making a scaffolded fusion polypeptide comprising:
(a) expressing from a host cell the polypeptide of Claim 1; and
(b) recovering said polypeptide.

17. The polypeptide produced by the method of Claim 16.

18. A method of screening molecules that bind a scaffolded fusion polypeptide comprising:

- (a) expressing from a host cell the polypeptide of Claim 1; and
- (b) identifying a molecule that binds to the polypeptide.

19. A method of screening molecules that activate a scaffolded fusion polypeptide comprising:

- (a) expressing from a host cell the polypeptide of Claim 1; and
- (b) identifying a molecule that binds to the polypeptide.

20. A method of screening molecules that inhibit a scaffolded fusion polypeptide comprising:

- (a) expressing from a host cell the polypeptide of Claim 1; and
- (b) identifying a molecule that binds to the polypeptide.

21. A method of screening molecules that modulate a scaffolded fusion polypeptide comprising:

- (a) expressing from a host cell the polypeptide of Claim 1; and
- (b) identifying a molecule that binds to the polypeptide.

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